

**Patent Claims****1. Sensor arrangement, comprising:**

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A semiconductor chip having a first surface, which has a media-sensitive region and at least one, first, electrical contact surface;

10 a support having a second surface, which faces the first surface of the semiconductor chip, has an opening, which at least overlaps with the sensitive region, and at least one, second, electrical contact surface, which at least overlaps with the at least one, first, electrical contact surface; and

15 an anisotropic conductor, which is arranged between the support and the semiconductor chip and produces an electrically conducting connection between the at least one, first, contact surface and the at least one, second, contact surface, and which has a traversing opening, which at least overlaps with the opening in the second surface, so that the sensitive region of the semiconductor opening is contactable through the opening with an analyte,  
20 wherein the anisotropic conductor seals the region outside of the opening against contamination with the analyte.

**2. Sensor arrangement as claimed in claim 1, wherein the anisotropic conductor is elastic.**

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**3. Sensor arrangement as claimed in claim 2, wherein the elastic, anisotropic conductor comprises an elastic, insulating, organic layer with embedded, conductive particles, grains or filaments.**

30 **4. Sensor arrangement as claimed in claim 3, wherein the elastic, anisotropic conductor comprises a silicone layer with embedded gold filaments, which extend perpendicular to the plane of the silicone layer.**

5. Sensor arrangement as claimed in claim 3, wherein the organic, elastic layer includes embedded, metal grains in the relaxed state in a concentration such that the number of electrical contacts between the grains is insufficient to produce a continuous electrical conductivity, wherein further,
  - 5 by the clamping of the elastic layer as sealing element between the support and the semiconductor chip, the layer is compressed to a degree such that, in the direction of compression, a sufficient number of electrical contacts is present for producing a conducting connection between the at least one, first, contact surface and the at least one, second, contact surface.
- 10 6. Sensor arrangement as claimed in one of the preceding claims, wherein the semiconductor chip has an ion-sensitive region.
- 15 7. Sensor arrangement as claimed in one of the preceding claims, wherein the semiconductor chip is a pH sensor element or a redox sensor element.